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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590	09/26/2005			
IBM Corporation intellectual Property Law Dept. IQOA/Bldg. 040-3 1701 North Street Endicott,, NY 13760			EXAMINER KIM, NICHOLAS J	
			ART UNIT 3622	PAPER NUMBER
DATE MAILED: 09/26/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/766,357	Applicant(s) MOORE, BRUCE WAYNE	
	Examiner Nicholas Kim	Art Unit 3622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on January 19, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>Jan 19 2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed January 19, 2001 fails to comply with the provisions of 37 C.F.R. 1.97, 1.98 and MPEP §609 because it lacks a concise explanation of the relevance of Document AL (JP 10-320418) , as it is presently understood by the individual designated in 37 C.F.R. 1.56(c) most knowledgeable about the content of the information listed that is not in the English language. This reference has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 1, 10, and 19 each recite the limitation "the layout" at lines 7, 11, and 9, respectively. Claims 2, 11, and 20 each recite the limitation "each product layout" at lines 4, 4-5, and 4, respectively. Claims 4, 13, and 22 each recite the limitation "the optimization model

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output” at lines 2, 2-3, and 2, respectively. Claims 8-9, 17-18, and 26-27 each recite the limitation “ the customization” at lines 1-2, 2, and 1-2, respectively.

5. There is insufficient antecedent basis for these limitations in the claims, rendering the scope of these claims indefinite.

6. Claims 3, 5-7, 12, 14-16, 21, 23-25 are rejected as being dependent on a rejected base claim discussed above.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-9 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. In particular, these Claims fail to meet the requirements of 35 U.S.C. 101 regarding pertinence to the technological arts.

9. As an initial matter, the United States Constitution under Art. I, §8, cl. 8 gave Congress the power to “[p]romote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.” In carrying out this power, Congress authorized under 35 U.S.C. 101 a grant of a patent to “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition or matter, or any new and useful improvement thereof.” Therefore, a fundamental premise is that a patent is a statutorily created vehicle for Congress to confer an exclusive right to the inventors for “inventions” that promote the progress of “science and the useful arts.” The phrase “technological arts” has been created and used by the courts to offer another view of the

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term "useful arts." In re Musgrave, 167 USPQ (BNA) 280 (CCPA 1970). Hence, the first test of whether an invention is eligible for a patent is to determine if the invention is within the "technological arts."

10. Further, despite the express language of 35 U.S.C. 101, several judicially created exceptions have been established excluding certain subject matter as being patentable subject matter covered by 35 U.S.C. 101. These exceptions include "laws of nature," "natural phenomena," and "abstract ideas." Diamond v. Diehr, 450, U.S. 175, 185, 209 USPQ (BNA) 1, 7 (1981), referred to herein as "Diehr." However, courts have found that even if an invention incorporates abstract ideas, such as mathematical algorithms, the invention may nevertheless be statutory subject matter if the invention as a whole produces a "useful, concrete and tangible result." State Street Bank & Trust Co. v. Signature Financial Group, Inc. 149 F.3d 1368, 1973, 47 USPQ2d (BNA) 1596 (Fed. Cir. 1998), referred to herein as "State Street" [Referring to In re Alappat, 31 USPQ2d (BNA) 1557 (Fed. Cir. 1994)].

11. This "two prong" test was evident when the Court of Customs and Patent Appeals (CCPA) decided an appeal from the Board of Patent Appeals and Interferences (BPAI). In re Toma, 197 USPQ (BNA) 852 (CCPA 1978), referred to herein as "Toma." In Toma, the court held that the recited mathematical algorithm did not render the claim as a whole non-statutory using the Freeman-Walter-Abele test as applied to Gottschalk v. Benson, 409 U.S. 63, 175 USPQ (BNA) 673 (1972). Additionally, the court decided separately on the issue of the "technological arts." The court developed a "technological arts" analysis:

The "technological" or "useful" arts inquiry must focus on whether the claimed subject matter...is statutory, not on whether the product of the claimed subject matter...is statutory, not on whether the prior art which the claimed subject matter purports to replace...is statutory, and not on

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whether the claimed subject matter is presently perceived to be an improvement over the prior art, e.g., whether it "enhances" the operation of a machine. Toma at 857.

12. In Toma, the claimed invention was a computer program for translating a source human language (e.g., Russian) into a target human language (e.g., English). The court found that the claimed computer implemented process was within the "technological arts" because the claimed invention was an operation being performed by a computer within a computer.

13. The decision in State Street never addressed this prong of the test. In State Street, the court found that the "mathematical exception" using the Freeman-Walter-Abele test has little, if any, application to determining the presence of statutory subject matter but rather, statutory subject matter should be based on whether the operation produces a "useful, concrete and tangible result." State Street at 1374. Furthermore, the court found that there was no "business method exception" since the court decisions that purported to create such exceptions were based on novelty or lack of enablement issues and not on statutory grounds. Therefore, the court held that "[w]hether the patent's claims are too broad to be patentable is not to be judged under §101, but rather under §§102, 103 and 112." State Street at 1377. Both of these analyses go towards whether the claimed invention is non-statutory because it is merely an abstract idea. Indeed, State Street abolished the Freeman-Walter-Abele test used in Toma. However, State Street never addressed the second part of the analysis, i.e., the "technological arts" test established in Toma because the invention in State Street (i.e., a computerized system for determining the year-end income, expense, and capital gain or loss for the portfolio) was already determined to be within the technological arts under the Toma test. This dichotomy has been recently acknowledged by the Board of Patent Appeals and Interferences (BPAI) in affirming a 35 U.S.C. 101 rejection

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finding a claimed invention to be non-statutory. Ex parte Bowman, 61 USPQ2d (BNA) 1669 (BPAI 2001).

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by Roberts, et al. (EP 0 952 539 A2, herein “Roberts”) and under 35 U.S.C. 102(e) as anticipated by Jacobi et al. (U.S. Patent No. 6,317,722, herein “Jacobi”). Applicant’s Claims 10, 18, 19, and 27, corresponding substantially to Claims 1 and 9, are also rejected under the following analysis.

16. Roberts teaches all limitations of Applicant’s Claim 1 including steps of developing models to predict customer purchases (Roberts at Para. 0033), scoring customers for each predictive model (Roberts at Para. 0034, “technology gradient”), determining specific layout areas (Roberts at Fig. 5 and Para. 0037, “template structure”), determining where a particular product can be placed in the layout (Roberts at Fig. 5 at 510, 520, 530, and 540, and Para. 0037, “dynamic content messages”), and using an optimization model to customize the layout for customers (Roberts at Fig. 6 and Paras. 0038-0040, “subsequent customized webpages”).

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17. With regard to Claim 9, Roberts also provides a customization directed at individual customers (Roberts at Abstract, “the customer”).

18. Jacobi provides a method including steps of developing models to predict customer purchases (Jacobi at FIG. 2 and Col. 11, ℓ. 21-27), scoring customers for each predictive model (Jacobi at Col. 11, ℓ. 28-39), determining specific layout areas (Jacobi at FIG. 6 and Col. 12, ℓ. 4-13, a Web page), determining where a particular product can be placed in the layout (Jacobi at FIG. 2 at step 88 and Col. 11, ℓ. 49-50, “sorted in order”), and using an optimization model to customize the layout for customers (Jacobi at FIG. 2 at step 90 and Col. 11, ℓ. 50-61, “sorted list is filtered ... a list ... of other items to be recommended”).

19. Concerning Claim 9, Jacobi further teaches a customization directed at individual customers (Jacobi at Abstract, “a user”).

20. Alternatively, Claims 1 and 8-9 are rejected under 35 U.S.C. 102(e) as anticipated by Kent (U.S. Patent Pub. No. 2002/0040374 A1). Applicant’s Claims 10, 17-18, 19, and 26-27, corresponding substantially to Claims 1 and 8-9, are also rejected under the subsequent analysis.

21. Kent also discloses a method including steps of developing models to predict customer purchases (Kent at FIG. 4 at 100 and Paras. 0062-0068, “automatic personalization software program”), scoring customers for each predictive model (Kent at Paras. 0066-0068, “establishes priorities based upon criteria”), determining specific layout areas (Kent at Paras. 0091 and 0095-0096, “standard design template” or “an aesthetically pleasing, readable final page”), determining where a particular product can be placed in the layout (Kent at Para. 0098, “match the relevant content and advertising, with a particular subscriber’s predetermined desires and

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preferences”), and using an optimization model to customize the layout for customers (Kent at FIG. 5 at 48, Paras. 0077-0082, “optimization program,” and Paras. 0098-0099, “final content of publication is variable”).

22. Moreover, Kent provides customizations directed at a niche market or individual customers (Kent at Para. 0007, “an individual, or a small group of subscribers”), thereby anticipating Applicant’s Claims 8-9.

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claim 2 is rejected under 35 U.S.C. 103(a) as unpatentable over Kent in view of Mohr et al. (U.S. Patent No. 6,826,727 B1, herein “Mohr”). Applicant’s Claims 11 and 20, each corresponding substantially to Claim 2, are also rejected under the following analysis.

25. As discussed in detail above, Kent teaches all limitations recited in Applicant’s Claim 1. However, Kent does not explicitly provide that the step of determining specific layout areas includes determining the maximum and minimum possible sizes for each product layout. Mohr provides an automatic document layout system that maximizes or minimizes shape elements, thereby teaching the element deficient from Kent (Mohr at Abstract, Col. 3, ¶. 33-48, and Col. 18, ¶. 38-56). Accordingly, it would have been obvious to one of ordinary skill in the art at the time Applicant’s invention was made to modify Kent to include the maximum and minimum size

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determination step of Mohr for advantageously providing a useful tool for automatically arranging and sizing document elements (Mohr at Col. 3, l. 45-48).

26. Claim 3 is rejected under 35 U.S.C. 103(a) as unpatentable over Kent in view of McCormick et al. (U.S. Patent Pub. No. 2002/0059339 A1, herein "McCormick"). Applicant's Claims 12 and 21, each corresponding substantially to Claim 3, are also rejected under the following analysis.

27. Kent does not explicitly teach that the step of determining specific layout areas further includes determining a preference multiplier for each layout area. McCormick provides a system that establishes correlations between the design and content elements of a first document and responses of recipients (McCormick at FIG. 4 and Para. 0027). Thus, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to modify Kent to include the preference multiplier feature of McCormick to advantageously assist in designing a document in a manner that is not merely aesthetically attractive but demonstrably effective (McCormick at Para. 0070).

28. Claim 4 is rejected under 35 U.S.C. 103(a) as unpatentable over Kent in view of Dowling (Dowling, Melissa, "Breaking the Pagination Rules," Catalog Age, June 1997, 77-79), and further in view of Weiss (U.S. Patent No. 6,801,333). Applicant's Claims 13 and 22, each corresponding substantially to Claim 4, are also rejected under the following analysis.

29. While Kent does teach a print manager for printing (Kent at FIG. 1 at 34), Kent does not explicitly disclose a step of passing the optimization model output to the print manager for

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printing only if the expected profit exceeds the production cost of the customized layout.

Dowling describes a printing condition in which the average price of items on a catalog page are required to be greater than the cost of printing the page (Dowling at p. 79). Dowling does not explicitly discuss printing criteria comparing *expected profit* to production cost. However, Weiss teaches comparing expected profit to cost for evaluating the desirability of printing a document (Weiss at Col. 1, ¶. 45-53). Accordingly, motivated by higher returns to layout customization (Dowling at p. 79), it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to modify Kent in view of the teachings of Dowling and the expected profit teachings Weiss for providing a step of passing the optimization model output to a print manager for printing only if expected profit exceeds the production cost of the customized layout.

30. Claims 5-7 are rejected under 35 U.S.C. 103(a) as unpatentable over Kent in view of Cornuejols, et al. (Cornuejols, Gerard and Michael Trick, Quantitative Methods for the Management Sciences: 45-760, Course Notes, Fall 1998, herein "Cornuejols"). Applicant's Claims 14-16 and 23-25, corresponding substantially to Claims 5-7, are also rejected under the subsequent analysis.

31. Although Kent teaches all limitations of Applicant's base Claim 1 including using an optimization model to customize a layout, Kent does not explicitly disclose that the optimization model is one of a transportation model, network model, or generalized network model. Cornuejols teaches various methods of network optimization (special types of linear programming or constraint-based models) including a transportation model (Cornuejols at

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§11.3.3), a network model (Cornuejols at §11.4), and a generalized network model (Cornuejols at §11.5). Accordingly, it would have been obvious to modify the optimization model feature of Kent to include any one of the transportation model, network model, or generalized network model taught by Cornuejols to advantageously provide a quick and intuitive approach to customizing a layout (Cornuejols at §11.1).

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wiley ("shutdown price," Dictionary of Economics, Wiley, 1995) defines the well-known microeconomic concept of "shutdown price" as a minimum price, typically set equal to average variable cost (production cost), at which a company would prefer to halt production. Srinivasan et al. (U.S. Patent Pub. No. 2002/0042738 A1) describes a cost function associated with an ad involving cost and expected profit at Para. 0109. Borning, et al. (Borning, Alan, Richard Kuang-Hsu Lin, and Kim Marriott, "Constraint-Based Document Layout for the Web," Multimedia Systems, Vol. 8, Iss. 3, October 2000, 177-189) describes applying constraint-based linear arithmetic models to document layout. Hammond et al. (U.S. Patent Pub. No. 2002/00892977 A1) discloses determining optimal advertising placement and promotion including determining the effect of a listing location at Para. 0117. Anderson et al. (U.S. Patent No. 5,974,396), cited by Applicants, discloses a method and system for analyzing customer purchasing information including grouping consumers into consumer clusters and printing promotional literature directed to particular customers. Sieber (U.S. Patent No. 5,649,216) discloses a method for automated layout of text and artwork on a greeting card. Evans et al.

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(U.S. Patent Pub. No. 2002/0036654) describes a computerized method for creating an advertisement, such as circular, including various templates for arranging product references.

Halstead, Jr. (U.S. Patent Pub. No. 2002/0111969) discloses a system and method for processing graphical objects for layout using an elastic difference operation. Buchanan et al. (U.S. Patent No. 5,515,490) describes a method and system to produce a temporal layout for controlling the presentation of a multimedia document including a temporal formatter using linear programming. Shirakawa (U.S. Patent No. 5,926,825) describes an automatic article layout device which evaluates layout results and selects a best layout result. Fasig (Fasig, Lisa Biank, "The Catalog Store: Catalog Shop Must Operate by the Book – and Calendar," The Cincinnati Enquirer, November 19, 2000) discloses that the placement of a product in the catalog can influence the number ordered. Chevan (Chevan, Harry, "Database Done Right," Catalog Age, November 1992, Vol. 9, Iss. 11, 109-111) describes predictive models and scoring customer databases in creating specialized mailings. Davenport et al. (Davenport, Thomas, Jeanne G Harris, Ajay K Kohli, "How Do They Know Their Customers So Well?" MIT Sloan Management Review, Winter 2001, Vol. 42, Iss. 2, 63-73) discloses that American Express designed four different covers for its merchandise catalog based on a household's past purchases. Bibelnieks et al. (Bibelnieks, Eric and Deb Campbell, "Mail Stream Streamlining," Catalog Age, November 2000, Vol. 17, Iss. 12, 117-120) describes the selection of an optimal mail stream based upon a mathematical model and details an IBM approach to horizontal marketing that optimizes the type and number of contacts with a customer.

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33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas Kim whose telephone number is (571) 272-1392. The examiner can normally be reached on Monday - Friday 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Stamber can be reached on (571) 272-6724. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NJK

A handwritten signature in black ink, appearing to read "Eric W. Stamber", with a stylized, cursive script.

**ERIC W. STAMBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600**